#### Workshop Questions



- 1. What are the impacts of aviation noise and emissions on the environment?
- 2. How do you believe those impacts may affect the growth of aviation?
- 3. Must the growth of aviation lead to increased environmental impact?
- 4. What is the relationship of NASA's noise and emissions goals to aviation's impact on the environment?

#### 1. What are the impacts of aviation noise and emissions on the environment?



- Scenarios offered for growth of aviation noise and emissions.
  - Demand
  - Technology advancement
- Workshop considered plausibility, aggressiveness, etc.
- Basis for objectives in gap analyses.

### 2. How do you believe those impacts may affect the growth of aviation?



- General agreement that aviation should be allowed to grow.
- Wide range of mitigation possible.
- Policy makers must determine what makes sense:
  - Scientific assessment of need.
  - Technical feasibility.
  - Economic reasonableness.

## 3. Must the growth of aviation lead to increased environmental impact?



- In short to medium term, scenarios indicate that aircraft noise and emissions are likely to increase.
- In far term:
  - It appears that noise levels can be lowered, but significant "invention" will be required.
  - Carbon fuels likely to result in increased emissions of CO<sub>2</sub>, NO<sub>x</sub>, etc.
  - Alternate fuels/propulsion system necessary to stop growth of emissions?

# 4. What is the relationship of NASA's noise and emissions goals to aviation's impact on the environment?



Let's discuss!